

JPRS-TND-84-028

14 November 1984

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

14 November 1984

WORLDWIDE REPORT NUCLEAR DEVELOPMENT AND PROLIFERATION

CONTENTS

WORLDWIDE AFFAIRS

Finland, USSR Seek Joint Nuclear Plant Venture in Yugoslavia (HELSINGIN SANOMAT, 30 Sep 84)	1
--	---

ASIA

PEOPLE'S REPUBLIC OF CHINA

PRC Accuses USSR of Nuclear Arms in SRV; Denial Issued (AFP, 25, 27 Oct 84)	4
PRC Concern Expressed Vietnam Denial	

Briefs Protocol With European Nuclear Energy Center	6
--	---

CANADA

Repair at Pickering Nuclear Generating Station Discussed (THE TORONTO STAR, 25, 26 Sep 84; THE GLOBE AND MAIL, 25 Sep 84)	7
Cost Estimate, by George Brett Retubing Device, by Thomas Claridge Remote Manipulator System, by George Brett	

LATIN AMERICA

INTER-AMERICAN AFFAIRS

- Chile-Argentina Nuclear Cooperation Praised
(Santiago Domestic Service, 19 Oct 84) 10

ARGENTINA

- Effects of Budget Constraints on Nuclear Plan Discussed
(CLARIN, 30 Sep 84) 11

Delays Noted

Industry Threatened, by Jaime Pahissa Campa
More Private Investment Urged, by Raul Boix Amat
Treaties Called Discriminatory, by Adolfo Saracho
Government Policy Scored, by Julio Araoz
Funding Held Back, by Renato Teregi

Briefs

- Intelligence Agents in CNEA 28
CNEA-KWU Agreement 28

BRAZIL

- Gomes Views Budgetary Problems, International Bids
(GAZETA MERCANTIL, 27 Sep 84; FOLHA DE SAO PAULO, 27 Sep 84) 29

Revised Budget Not Approved
Current Program Not Affected

- Editorial Calls for Fewer Plants, More Realistic Program
(O ESTADO DE SAO PAULO, 28 Sep 84) 32

- Nuclebras To Build Uranium Concentrate Plant in Somalia
(GAZETA MERCANTIL, 27 Sep 84) 34

- Beryllium Production Drops 18.2 Percent in 1983
(GAZETA MERCANTIL, 26 Sep 84) 35

Briefs

- Rio Limits Plant Construction 37

PERU

Briefs

- Nuclear Institute Employees Complain 38

NEAR EAST/SOUTH ASIA

PAKISTAN

Briefs	
Nuclear Installations Said Secure	39

SUB-SAHARAN AFRICA

SOUTH AFRICA

Ineffectiveness of IAEA Vote Noted	
(David Furlonger; RAND DAILY MAIL, 3 Oct 84)	40
Briefs	
Nuclear Stance	41

WEST EUROPE

FINLAND

Spent Fuel Issue Frustrates Nuclear Law Panel	
(Renny Jokelin, Juhani Pekka'a; HELSINGIN SANOMAT, 29 Sep 84)	42

FRANCE

First Results From Jet Fusion Experiments Reported	
(NUCLELEC, 19 Sep 84)	48
Underground Research Lab, New Waste Storage Sites Expected	
(NUCLELEC, 19 Sep 84)	49
Briefs	
Paluel 2 Linked to Network	50
Chinon Bi Resumes Operation	50
Saint Pierre Uranium Processing Halts	50

FINLAND, USSR SEEK JOINT NUCLEAR PLANT VENTURE IN YUGOSLAVIA

Helsinki HELSINGIN SANOMAT in Finnish 30 Sep 84 p 41

[Article: "Imatra Power Competing for Nuclear Power Plant Contract in Yugoslavia"]

[Text] Lovisa--The Finns have reached a critical phase in the attempt to enter the nuclear power plant market in Yugoslavia according to Imatra Power.

Yugoslavia is one of those few countries which have decided to continue the construction of nuclear power plants. According to the original ambitious plans, Yugoslavia intended to build six 1000-megawatt plants. Practically speaking, the completion of one power plant is an apparent certainty. The plant will be built near Zagreb in 1987.

Imatra Power is playing a kind of dual role in Yugoslavia's power plant project. The primary emphasis in its objective is to build the whole plant together with the Soviet power plant supplier Atomenergoeksport. At the present time Imatra Power is also doing everything possible to get its foot in the door in order to become a consultant in the process to select a supplier.

Indeed, Imatra Power itself will not be able to make the choice since the dual role of the Finns has been made clear to the Yugoslavians and Imatra Power intends to give up its consulting role at a suitable time.

The supplier of the plant will be determined in the years 1985--86. The importance of the bid for the Finns is reflected in the fact that Imatra Power has a permanent representative in Belgrade to look after the firm's interests.

Imatra Power is also trying to offer the Yugoslavians its expertise in municipal heating. It is also intended to heat the city of 800,000 residents itself with the plant to be built at a distance of 27 kilometers from Zagreb. Imatra Power, for its part, has knowledge on the transfer of municipal heating with the construction of Naantali's municipal heat pipe.

Local Labor Contribution Large

Imatra Power organized its consulting work in 1981 by establishing a separate firm called IVO Consulting Engineers. According to Kari Huopalahti, managing

director of IVO Consulting Engineers, the Yugoslavians would build a considerable portion of the plant inasmuch as it would be built on the basis of the offer from Atomenergoeksport and Imatra Power. The large share of Yugoslavian labor is one of the trump cards of the Soviet-Finnish supplier.

But others have their own trump cards also. For example, the Canadians' advantage is that they are offering a plant that would use natural uranium. Yugoslavia has its own good uranium reserves.

Trump cards can, however, be found from all the bidders and they will be used since it is now a buyer's market in this area. Even though doubts have been expressed about Yugoslavia's ability to pay, suppliers are competing for this project all the way to the United States.

According to Managing Director Huopalahti, Imatra Power will not run away from its goals even though one could thus argue about the attempts to export power plants. "If the knowledge is there, it makes sense to take advantage of it.

"Imatra Power can possibly exploit the knowledge to be gained from this 1000-megawatt project in Finland also," he states.

500-Megawatt Plants to Developing Countries

Imatra Power is involved in a project of the International Atomic Energy Agency, in which the operational possibilities of small and medium size, 300-600-megawatt, plants are being developed.

Doctor of Engineering Erkki Aalto of Imatra Power is involved in a project aimed at developing countries. The intent is to construct small and medium size plants in countries in which the electric transmission networks cannot tolerate large 1000-megawatt plants.

As far as projects in developing countries are concerned, a 500-megawatt plant developed on the basis of the experience gained from Imatra Power's and Atomenergoeksport's plant in Lovisa is considered to be a factor worthy of international consideration.

Cooperation Between Imatra Power and Atomenergoeksport Is of Interest

The USSR is wooing the Finns in its efforts to find a partner for its nuclear power exports, writes NUCLEONICS WEEK, an international nuclear power plant journal.

In the last issue of the paper extensive treatment is given to Finnish-Soviet cooperation, which it is said to be a natural consequence of the construction of plants 1 and 2 in Lovisa.

After having built an operational 440-megawatt plant together, the Finns and the Soviets have developed a joint 1000-megawatt plant, which is being marketed to Yugoslavia, among other places.

Also a smaller type or 440-megawatt plant has been further developed according to the paper. Imatra Power and the Soviet Atomenergoeksport Association are also offering a 500-megawatt version developed from this.

NUCLEONICS WEEK also discusses Finland's own nuclear power plant projects and states that in addition to Atomenergoeksport, French Framatome and Sweden's Asea-Atom are participating in the bidding according Finnish government sources.

According to the paper, the site of the nuclear power plant has not been selected, but "it has been generally accepted" that a Soviet reactor will be built in Lovisa while, on the other hand, a Western reactor will be built in Olkiluoto on Teollisuus Power's property.

NUCLEONICS WEEK states that the nuclear power plant decision is tied to the revision of the nuclear energy law. It is expected that the legislative process will take at least a year, writes the paper.

10576

CSO: 5100/2503

PRC ACCUSES USSR OF NUCLEAR ARMS IN SRV; DENIAL ISSUED

PRC Concern Expressed

NC250915 Paris AFP in English 0827 GMT 25 Oct 84

[Excerpt] Beijing, 25 Oct (AFP)--China has accused the Soviet Union of deploying nuclear weapons at the Cam Ranh Naval Base in Vietnam, the head of a visiting French Socialist Party delegation said. Guy Allouche told journalists here yesterday that Chinese leaders had expressed concern at what they called the growing threat posed by Soviet nuclear weapons recently installed at Cam Ranh Bay and those stationed on China's northern borders. The leaders did not specify whether the weapons were land-based, sea-based or airborne, he added.

Chinese officials have never before accused Moscow of installing nuclear weapons at Cam Ranh Bay, although they frequently complain that the bay has become a Soviet conventional military base, Western military experts said.

Vietnam Denial

NC290905 Paris AFP in English 0849 GMT 27 Oct 84

[Excerpts] Hanoi, 27 Oct (AFP)--Vietnam today strongly denied that nuclear weapons had been deployed at Cam Ranh Bay, the former U.S. naval base that is now being used by the Soviet Union.

Authoritative sources issued the denial here after a French Socialist Party delegation in Beijing said that Chinese leaders had told it that Cam Ranh, south of the port of Nha Trang, had become a Soviet atomic base.

(But in Beijing yesterday, the Foreign Ministry issued a clarification saying that Chinese officials had only told the French delegation that Cam Ranh was a "Soviet military base"--a frequent Chinese allegation.)

"The allegations by Chinese leaders in Beijing that there are nuclear weapons at Cam Ranh Bay are a pure and simple fabrication. We reject them vehemently," the sources said.

Vietnam, the Soviet Union's main ally in Asia, has repeatedly said that no foreign country would be allowed bases on its territory.

However, the sources reiterated Hanoi's known position that it "has the right to allow Soviet ships and planes to use Vietnamese ports and airports."

"These ships and planes are not a threat to any other country," the sources said.

"The ruling circles in Beijing and in Washington are making a big fuss over the supposed Soviet military base at Cam Ranh to hide their shady maneuvers against Vietnam and other Indochinese people," the sources said.

CSO: 5100/4112

BRIEFS

PROTOCOL WITH EUROPEAN NUCLEAR ENERGY CENTER--Geneva, October 18 (XINHUA)--
China signed a second 3-year protocol here today with the European Center of Nuclear Energy (CERN) on the study and research in high energy physics. This is the second protocol signed between the CERN and China's Institute of High Energy Physics and the Chinese University of Science and Technology. The first was signed in 1981. The new protocol provides for greater cooperation in accelerator theory and technology and more academic exchange. The CERN, with its headquarters here, has 12 member countries. Two of its scientists, Carlo Rubbia and Simon van der Meer, won the 1984 Nobel Prize of physics yesterday. [Text] [06190020 Beijing XINHUA in English 0859 GMT 19 Oct 84]

CSO: 5100/4109

REPAIR AT PICKERING NUCLEAR GENERATING STATION DISCUSSED

Cost Estimate

Toronto THE TORONTO STAR in English 25 Sep 84 p D2

[Article by George Brett]

[Text]

Estimates of the cost of last year's failure at Ontario Hydro's Pickering nuclear generating station have risen to \$766 million from the previous estimate of "at least \$700 million" in early August.

David Mosley, technical information officer for Ontario Hydro, said yesterday the latest estimates are \$345 million for the cost of replacement energy and \$421 for material and labor.

Mosley, interviewed at a Canadian Nuclear Society conference in Toronto, said the \$345 million for replacement power is \$55 million less than forecast originally, but the over-all increase is the result of a jump in material and labor costs.

The Pickering A plant, with four reactors, was shut down Aug. 1, 1983, after a broken pressure tube caused spillage of the heavy water that controls nuclear fission. It was later decided to replace all 780 tubes in two of the four reactors.

Mosley said Hydro has succeeded in reducing radioactivity in the plant by 85 per cent, and expects to begin the costly rebuilding job late this month or in October, six months earlier than forecast. He expects production to resume in the summer of 1986.

Retubing Device

Toronto THE GLOBE AND MAIL in English 25 Sep 84 p 14

[Article by Thomas Claridge]

[Text]

A robotic device developed in the United States is being offered for use by Ontario Hydro in a \$760-million retubing of two Pickering Generating Station reactors.

The device, dubbed ROSA (for Remotely Operated Service Arm), was built by Westinghouse Electric Corp. to reduce workers' exposure to radiation in the U.S. nuclear power industry.

Although it was developed primarily for use within the confined spaces inside nuclear boilers, a Toronto conference was told yesterday that its first application was to plug holes inside a power reactor.

A paper submitted to the conference on robotics and remote handling in the nuclear industry also said two ROSA units are to be used to remove debris from the damaged

Three Mile Island reactor near Harrisburg, Pa.

"A lease proposal is being drafted for presentation to the Canadian utility to use ROSA to aid in their replacement program," the Westinghouse paper said.

Ontario Hydro officials at the conference said two Hydro representatives were sent to Westinghouse earlier this year when it became clear that a much larger manipulator under development by Spar Aerospace Ltd. of Toronto wouldn't be ready in time for the tube-removal phase of the retubing planned for Pickering's Unit 1 and 2 reactors.

The Hydro officials stressed that the U.S. device is too small to carry out the actual tube removal but said it may be of some use in other

incidental work.

In the paper, presented to the conference by Joe Herberg of the firm's Nuclear Services Integration Division, Westinghouse said the basic objective is "removing the worker from the radiation environment."

He said the device has already been used for four projects. In one of them the device entered a nuclear boiler, inspected it to locate tube leaks and plugged the leaks without any humans being present in the high-radiation zone.

In another job, the device reinforced 2,200 boiler tubes and expanded 1,200 tube ends.

Mr. Herberg said the device has already been used in Europe and the first ROSA for use in Japan was shipped in June.

Remote Manipulator System

Toronto THE TORONTO STAR in English 26 Sep 84 p E3

[Article by George Brett]

[Text]

As an engineer, Denis Richards winces at an inaccuracy he has read in some newspapers about Spar Aerospace Ltd.

The remote manipulator system being developed by Spar for use in nuclear plants is not a simple case of "bringing the space arm down to earth."

Richards says the light and slender Canadarm, developed by Spar and used on the U.S. space shuttles, "wouldn't even lift its own weight on earth" despite its ability to perform complex operations in the weightlessness of space.

By contrast, the huge remote-manipulation system being developed to retube nuclear plants is a monster.

It has a 20-foot arm "that can lift its weight and 6,000 pounds like you wouldn't believe," he says.

"It's a completely different mechanical system. What is being brought to earth is (the Canadarm's) control and software technology."

Richards, a mechanical engineer involved in marketing for Spar's remote manipulator systems division, displayed a model

of the system this week at a robotics conference sponsored by the Canadian Nuclear Society at the King Edward Hotel.

In an agreement with Ontario Hydro expected to be completed shortly — and likely to be worth \$35 million — Spar is developing the huge machine for "dedicated use" in retubing of nuclear plants, where it will remove end fittings on pressure tubes, withdraw the tubes and replace them with new units.

That's exactly what must be done in a complex, two-year operation now estimated to cost \$766 million (including the purchase of replacement electric power) at Hydro's Pickering generating station. A pressure tube ruptured in August, 1983, causing leakage of the heavy water that controls nuclear fission.

But there's more of a market for the arms. All of Hydro's

plants will eventually need retubing, along with aging U.S. plants.

Richards estimates this "retrofitting" market at \$1.6 billion a year. And even though the figure includes a great deal of non-robotic technology, he's "presumptuous enough" to hope that Spar, in a joint marketing effort with Ontario Hydro, will be able to capture 10 per cent of it.

Hydro and Spar are close to signing a marketing agreement "to explore the opportunities in U.S. nuclear plants related to robotics."

The space arm "was an expression of technical ability," he says.

Spar is "a real hero in the eyes of" the U.S. National Aeronautics and Space Administration.

Richards now aims to cash in on Spar's credibility and Ontario Hydro's nuclear expertise by taking a slice of the U.S. retrofit market from under the hard noses of the nuclear giants.

CHILE-ARGENTINA NUCLEAR COOPERATION PRAISED

PY191835 Santiago Domestic Service in Spanish 1630 GMT 19 Oct 84

[Text] Asked whether the signing of the Beagle agreement would have any impact on Argentine-Chilean nuclear relations, Juan Bautista Mir, executive director of the Chilean Nuclear Energy Commission, this morning said that Chile and Argentina have always maintained excellent relations in the nuclear field.

[Begin recording] [Mir] Chile has always maintained excellent relations with Argentina in the nuclear field.

[Question indistinct]

[Mir] We have been working far beyond the framework of a peace treaty. There has been great cooperation since 1976, when we signed a nuclear cooperation agreement, and even before that year. Argentina has trained Chilean personnel. We have worked in close cooperation and have undertaken some joint projects.
[end recording]

Mir added that several joint projects had been undertaken in an atmosphere of mutual cooperation. There has been close cooperation in the nuclear field with Argentina, and some Chilean scientists are working in Argentina on research programs.

Asked about the possibility that Argentina could make a nuclear bomb, Mir said he is sure Argentina is conducting research for peaceful purposes.

[Begin Mir recording] I am sure Argentina is undertaking its nuclear projects for peaceful purposes and our cooperation in the nuclear field is already [words indistinct] even in sensitive areas we are working together. Thus, we do not think, at least we have no reason to suspect, that there might be any distortions. [end recording]

Mir made these remarks upon announcing that IAEA Director General Hans Blix will arrive in Santiago on 21 October at the invitation of the Chilean Government. During his visit, Blix will visit the two Chilean reactors in Santiago and will give lectures on nuclear issues. He will return to the IAEA headquarters in Austria after a 1-week visit to Chile.

CSO: 5100/2017

ARGENTINA

EFFECTS OF BUDGET CONSTRAINTS ON NUCLEAR PLAN DISCUSSED

Delays Noted

Buenos Aires CLARIN in Spanish 30 Sep 84 pp 6-7

[Text] The Nuclear Plan illustrates the country's development potential and, at the same time, the high costs of failing to lend continuity to its programs. Three decades after research began in this field, atomic energy accounts for seven percent of installed generating capacity. The Embalse Nuclear Power Plant, which went on line last year, contributes 600 megawatts, and Atucha I has been putting out 335 megawatts since 1974.

The Nuclear Plan calls for another four power plants. The first of them, Atucha II, was supposed to go into service in 1987. Now, owing to budget constraints, estimates are that it will be completed in 1990.

The Industrial Heavy Water Plant on which work was supposed to begin this year will not be under construction until late 1986. The delay in starting up the Pilot Fuel Reprocessing Plant will be even longer, as it is now supposed to go on stream in 1988. Moreover, due to budget restraints as well, the purchase of the initial load of heavy water for the Embalse Nuclear Power Plant will have to be postponed. Finally, the uranium enrichment plant will also be delayed, and its first stage is expected to be completed in 1986.

Logically, these delays will also impact on the other three private plants. Under the Nuclear Plan, Cuyo I is expected to start up in 1991, the NOA plant by 1994/95 and the fourth unit by 1997.

Higher Costs

A consequence of these delays is much higher costs, because a change in timetables and the pace of work boosts unproductive costs and because in the case of projects already contracted for, there are costs involved in rescinding those contracts or in deferring construction. Officials of the National Commission for Atomic Energy (CNEA) feel that this year's budget cuts will entail higher costs in the years to come.

In addition, these cuts have a major effect on the domestic contracting firms linked to nuclear energy, a sector in which there are about 60 concerns, 2 of them in which the government is a partner.

We can gauge the damage by the lost sales of pacesetting firms. Whereas they would have recorded \$90 million in sales this year if the plan had proceeded normally, their actual sales will not exceed \$30 million.

As far as investment is concerned, only \$300 million of the scheduled \$1.4 billion was actually spent, and all of it came from the public sector, because the private sector, which was assigned a 30 percent share, earmarked practically nothing for this purpose, according to the estimates of businessmen.

Furthermore, the lack of continuity in the nuclear program has meant the loss of personnel who have undergone lengthy training. During the period of the heaviest activity (1980/81), the payrolls of sector enterprises (not including CNEA agents) numbered more than 12,000 people, a figure that was expected to rise to 20,000 in 1985. The number of jobs is down to 7,000 or 8,000 at present. As for people in the commission, nuclear power circles say that skilled personnel are lagging behind in salaries and that if this situation continues, it could lead to a brain drain that would endanger the plan.

Energy Demand

Once they are all on line, the 6 nuclear power plants will add some 3,500 megawatts to our energy supply. Another 35,000 megawatts will come from the hydroelectric plants scheduled to go on stream before the year 2000.

Current energy demand stands at around 10,000 megawatts, a level that has been held down by the stagnation of industry in recent years. Since demand doubles every decade, in 20 years the country's energy use will be 40,000 megawatts. This means that cancellation of or delays in nuclear and hydroelectric plants would result in a major energy shortfall. Even if these projects were undertaken, the country would have a shortfall unless new power plants were built.

The CNEA's budget this year is equivalent to 1.18 percent of the GDP, as opposed to 1.6 percent last year and around 2.5 percent in previous fiscal years.

The plan included in the general budget that was submitted to Congress sought to reconcile the requirements set forth by the CNEA and the bill drafted by the Finance Secretariat. Treasury funding was a little more than half of what the CNEA wanted, which was 29 percent more than in 1983.

By late this August, the commission had taken in just 25 percent of the specific funding provided for in the draft budget, while the Treasury had furnished barely 3.5 percent of the scheduled funds.

Virtually no revenues were coming from borrowing, which had been estimated at 45 percent of total funding. Thus, 8 months into the fiscal year, the commission had taken in just 4.4 percent of its scheduled funding.

Investment Down

As far as expenditures are concerned, the delays the commission was forced to order impacted most heavily on debt repayments and advances to suppliers and contractors.

With regard to capital goods and construction, by the end of August 89 and 76 percent of scheduled expenditures, respectively, had yet to be made. This illustrates the delays in nuclear energy investments.

In the construction of Atucha I, domestic firms did 90 percent of the construction work, 35 to 45 percent of the nuclear facilities and 38 percent of the turboalternator and electromechanical components. Estimates are that because of the experience acquired, domestic industry could do 90 percent of the work on future plants once the goals of this Nuclear Plan are achieved.

The program up to 1997, which is now up in the air, calls for investments of \$8 billion. Once these nuclear power plants are on line, however, they will be bringing in about \$1.2 billion a year in current prices from energy sales. The feeling, then, is that the rate of return on investment is high, and we are not even considering the savings in foreign exchange and the nuclear sector's contribution to the country's technological and economic development.

Overseas borrowing for the nuclear program totals \$800 million so far (2 percent of the foreign debt), and 80 percent of future investment is expected to come from the domestic market.

Over the past 15 years the country has spent some \$5 billion on nuclear energy, which represents less than 1 percent of Argentina's GDP during this period.

The CNEA has slightly more than 6,500 employees. More than half are nuclear sciences graduates working in fields ranging from basic research in the structure of the atom to applications in other areas.

Cycle

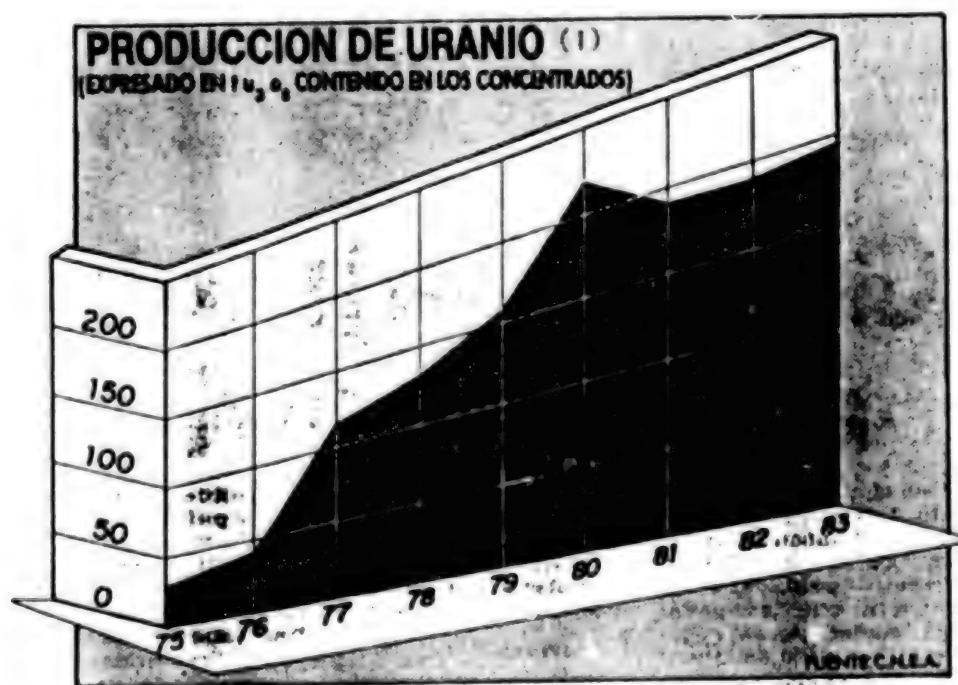
It is important to note that the nuclear plan involves more than just the construction of power plants; it also calls for developing the entire fuel cycle, which comprises the following stages: extraction of the ore; obtaining uranium oxide; conversion into nuclear fuel; bombardment in the power plant, and reprocessing of the fuel. The latter step consists of separating the radioactive residues and giving them

a very stable structure to prevent contamination, and then utilizing the plutonium generated by the bombardment of uranium (the recovery of plutonium boosts uranium supplies by around 50 percent).

Another facet that must not be overlooked is exporting inputs and technology to countries with less developed energy sectors. The CNEA is currently involved in building an atomic power plant on the outskirts of the Peruvian capital. Estimates are that by the end of this century the country could export reactors and heavy components, critical materials, technology, skilled manpower and consulting and engineering services for projects overseas.

Moreover, the main hydroelectric plants will already have been completed by the close of the next decade, and therefore nuclear power will have to meet the growing demand for energy.

Thus, budget constraints must not be allowed to impinge on this sector, which for so many years was able to surmount the problems that brought other development fronts to their knees.



Key:

1. Uranium Production (expressed in tons of uranium oxide contained in concentrates)

Industry Threatened

Buenos Aires CLARIN in Spanish 30 Sep 84 pp 8-9

[Article on statements by Jaime Pahissa Campa]

[Text] "Economic problems over the past 3 years have delayed the construction of Atucha II by 36 months, and this means that its competitiveness is being stretched to the limit," the president of the Argentine Association of Nuclear Technology, Jaime Pahissa Campa, told CLARIN. He indicated: "The existing Nuclear Plan calls for the construction of six nuclear power plants by 1997. In other words, Embalse and Atucha I, which are in operation, and Atucha II, which is under construction, are supposed to be joined by three others."

"The plan focuses on the entire fuel cycle, not just the construction of plants. The plants on the drawing board are supposed to make up for an energy shortfall, but much more important, in my judgment, is the development of domestic technology through the CNEA and associated private industry.

"The domestic component of Atucha I was about 40 percent, and domestic industry built about 52 percent of Embalse, supplying heavy parts and electromechanical items, with the CNEA taking charge of assembling the plant. The entire Atucha II project is in the CNEA's hands, and we are thus meeting the goal of the Nuclear Plan, which is to build the final power plant with an 85 percent domestic component."

Projections

Towards the end of this century or the beginning of the next, Argentina will need to build a nuclear power plant every 2 years and then one a year to meet the energy demand that the country's growth entails. If by the year 2000 the country is self-sufficient in nuclear power, then we will be able to speak of total energy independence.

This would put Argentina in a dominant position, inasmuch as other Third World countries are going to need nuclear power plants next century, and if our country continues to work in this field, it will be able to provide them, which will represent a major source of foreign exchange.

Energy demand is not very high in the country at present, and therefore we can make do with four or six nuclear plants by the end of the century. At the moment, several companies are underutilizing their capacity; the larger ones can handle this, but the small and medium-sized companies are having serious difficulties. Hence, although current conditions in the country are not optimum for investment, we must take stock of what we might lose if these companies shut down. If they close their doors, their personnel will move on to

other fields or leave the country, and I am talking here not only about professionals but specialized technicians, trained welders and skilled laborers as well. It cost the government a great deal of money over at least 22 years to train these human resources, and if programs are shut down, a very costly investment will have gone to waste.

Delays

In a nuclear power plant the investment costs are very high and the operating costs very low, while the reverse is the case with a thermal plant. The time it takes to build a nuclear plant has a major impact on its cost, because the the interest on the investment capital is very high, and thus delays substantially boost the plant's final cost. Economic problems over the past 3 years have delayed the construction of Atucha II by 36 months, and this means that its competitiveness is being stretched to the limit.

A power plant is competitive when a kilowatt of installed power costs less than \$3,000. At \$3,000 per installed kilowatt, Atucha II, which is a 700-megawatt plant, should not exceed \$2.1 to \$2.2 billion. The initial budget for the plant was \$1.5 billion, and the delays are narrowing its competitive margin.

The consequences of the delays at the heavy water plant are different, because this project was contracted out to a Swiss firm, and Switzerland has resisted heavy international pressures in making the deal with Argentina. Therefore, if our country wanted to rescind the commitment, the suppliers would not object at all, and it would not be a good idea at all to postpone construction.

The enriched uranium plant is domestic and utilizes our own technology. Argentina is one of seven countries that have undertaken such a project, and any delays here would create internal problems. We must prevent such delays and bear in mind the great efforts put forth to executive this project.

Argentina won an international bidding for the installation of an atomic power plant that uses uranium 235 in Peru.

More Private Investment Urged

Buenos Aires CLARIN in Spanish 30 Sep 84 p 8

[Article on statements by Raul Boix Amat]

[Text] If the Nuclear Plan is amended, a greater share for private investment should be encouraged, indicated Raul Boix Amat, the president of the Federation of Nuclear Associations of the Americas, who added: "The funding situation this year for nuclear development cannot be repeated in 1985."

In the opinion of many officials, the current budget represents a transition until sector planning is completed. We realize that the country is going to have tough times next year and for some of 1986, but the objectives of the Nuclear Plan go beyond short-term considerations.

The industry has gone through a very difficult situation, and the major nuclear projects have had to be rescheduled, which means a great deal of unproductive spending. Atucha II is scheduled to go on stream in 1990, 3 years late.

Continuity

The president has come out in support of what has been done so far, and he has given assurances that the country will continue towards its goals in nuclear power development.

If the current nuclear program is amended, a greater share for private investment should be encouraged, because it is obvious that the government cannot provide the funds needed to complete the program at the required pace.

Argentina is now in a position to play a larger role in building nuclear plants and in the fuel cycle, and if we want the plan to achieve its goals, we will have to promote an import-substitution policy in this regard, even though the exchange rate is not presently favorable to local goods and services. In this regard, Argentine industrialists need to count on a long-term plan that will enable them to channel their investments and to assure the continuity of their goods and services.

Brazil has emphasized industrial expansion, and therefore its industry is more dependent today on foreign technology than Argentina's is.

Treaties Called Discriminatory

Buenos Aires CLARIN in Spanish 30 Sep 84 pp 8-9

[Article on statements by Adolfo Saracho]

[Text] "All of Argentina's nuclear facilities are subject to international safeguards," indicated Adolfo Saracho, the general director of Nuclear Affairs and Disarmament of the Foreign Ministry, in emphasizing the country's peaceful use of atomic energy. He made the following statements to CLARIN:

The Argentine Republic has been pursuing a nuclear program for peaceful purposes, with an eye towards the permanent goals of independence and self-sufficiency in this field. It has thus achieved a prominent place in the concert of nations and has mastered technologies regarded as "sensitive" that have accorded the country considerable political weight.

The firm nuclear policy that the nation has pursued consistently and without interruption obviously deserves the credit for the remarkable scientific, technological and industrial progress that Argentines are so proud of today.

The progress we have made enables us to export domestic technology and goods with high value added and also makes the benefits of peaceful nuclear power accessible to other nations. This has been accomplished in nuclear cooperation accords between Argentina and most other Latin American countries, thus furthering urgent regional integration.

Vertical cooperation (between the most advanced countries that possess nuclear technology and the relatively less developed countries), unlike horizontal cooperation (between developing countries), has posed considerable difficulties that the Argentine Nuclear Plan has had to overcome.

On the international scene, the legitimate desire to keep nuclear arms from proliferating often becomes intertwined with the economic interests of the most advanced countries, who want to perpetuate their advantages and maintain their technological predominance by making it hard for others to develop their own peaceful industry and thus preserving an unequal relationship between supplier and recipient nations. In an attempt to reserve this know-how exclusively for those who already possess it, they have also formulated the theory that technology for peaceful uses is indistinguishable from technology applied to military use. This theory seeks to make materials, equipment and technology unavailable instead of banning their use for military purposes.

Discrimination

In this regard, the Nuclear Weapons Nonproliferation Treaty of 1968 (NPT) is the centerpiece of a discriminatory system geared towards consolidating the economic and technological oligopoly of the nuclear powers, which would thus be the only countries entitled to make comprehensive use of atomic energy.

The treaty is intrinsically discriminatory because it recognizes different rights and duties of States depending on whether or not they possessed nuclear weapons at the time the treaty was concluded. The enforcement of the treaty is discriminatory as well. Under Article 4, the advanced nuclear countries pledged to facilitate the broadest possible exchange of equipment, materials and scientific and technological information for the peaceful use of atomic energy. Such cooperation, intended to mitigate the initial discriminatory nature of the treaty, has not materialized in practice. As has been repeatedly stated, nonproliferation safeguards and guarantees for receiving technology and supplies must be inseparable. Yet Argentina has been under constant pressure to furnish international safeguards (in advance and without any quid pro quo) in connection with all of its nuclear activities. Experience has shown that a blank check (such as the NPT or comprehensive

safeguards) should not be handed over without assurances that the necessary technology, equipment and services will be received from the supplier countries.

The best way to prevent nuclear proliferation is to intensify, not diminish international cooperation, by applying the appropriate safeguards to specific technology transfers. In this regard, Argentina has contended that the system of safeguards of the International Atomic Energy Agency (IAEI) is the one best suited to assuring nonproliferation, and accordingly all Argentine nuclear facilities that have resulted from international cooperation are subject to international safeguards. In other words, Argentina has no objections to this system of safeguards as long as it applies directly to the supply of materials, equipment and technology for the pursuit of a program to use nuclear energy for peaceful purposes.

Government Policy Scored

Buenos Aires CLARIN in Spanish 30 Sep 84 pp 10, 12

[Article on statements by Julio Araoz]

[Text] Peronist Deputy Julio Cesar Araoz, speaking to CLARIN, leveled harsh criticism at the government nuclear energy policy, going so far as to say that it is "dismantling" the sector. The deputy chairman of the lower house's Energy Committee indicated: "The Argentine Nuclear Plan is behind schedule, without a future and without economic possibilities. It is caught between political, economic and ideological pressures."

"There have unquestionably been political pressures, because other countries have tried to hamper Argentina's Nuclear Plan. For example, when the U.S. vice president arrived here, he spoke of the need to agree to a system of safeguards; Mexican President De la Madrid tried to get Argentina to sign the Tietelolco Treaty, which it did not, and the IMF wants Argentina to suspend or end its Nuclear Plan. The members of the IMF are afraid that Argentina might conduct a nuclear experiment for military purposes or perhaps more importantly, that Argentina might one day compete in technology transfer with the multinational corporations that have an interest in Argentina's creditor banks.

"There are also ideological pressures, such as the peace platform that was brought up by the pseudo-environmental movement that has been getting such publicity among our young people since a few lawmakers from German environmentalist groups visited our country recently when the Green Party was founded. This is a spurious imported ideology espousing an approach different from the one in Latin America and in Argentina in particular, where we believe that we should use our natural resources rationally to further national development.

"Other pressures have been economic, stemming from the Finance Ministry, as the letter of intent that the economy minister sent to the IMF specifically mentions the Argentine Nuclear Plan in connection with budget cuts. This and national defense restrictions are two other IMF conditions for rescheduling our foreign debt.

"It bears mentioning that when countries like Brazil and Mexico rescheduled their debts with the IMF, they had to cut back on their nuclear programs, and Argentina is being asked to do likewise. This means that the Nuclear Plan and the foreign debt are directly linked.

Cutbacks

"The Economy Ministry is cutting down on the flow of funds to the CNEA. Of the 12.227 billion pesos that the Treasury was supposed to rechannel to the CNEA, only 6.8 percent actually had been as of mid-year. If we consider that the Treasury has pledged to turn over 38.19 billion under the draft budget, the CNEA has received only 2.2 percent as of June.

"To carry out the scheduled nuclear program, the commission requested a Treasury contribution of 33.251 billion pesos (in December 1983 values). The budget that was submitted to Congress earmarked only 14.731 billion pesos (in December 1983 values) for the CNEA, a cut of 56.05 percent.

"If we analyze the cut from a financial standpoint, the CNEA was supposed to have gotten 16.76 billion pesos during the first half of the year. We arrive at this figure by dividing the full-year estimate, 33.521 billion, in half. It received only 836 million, in other words, only 4.98 percent; thus, the Nuclear Plan has had its financing cut by 95.02 percent.

"Moreover, the restrictive salary policy that the government wants to pursue in the CNEA is going to lead to a brain drain and the destruction of the public nuclear sector. Our current nuclear development has been achieved not only through research but also thanks to skilled manpower, who have been held back and have seen their salaries shrink. The salary lag is about 37.2 percent from December 1983 to the present.

"Members of the National Commission for Atomic Energy have told me that some 200 employees have resigned and are going elsewhere.

Efforts Undone

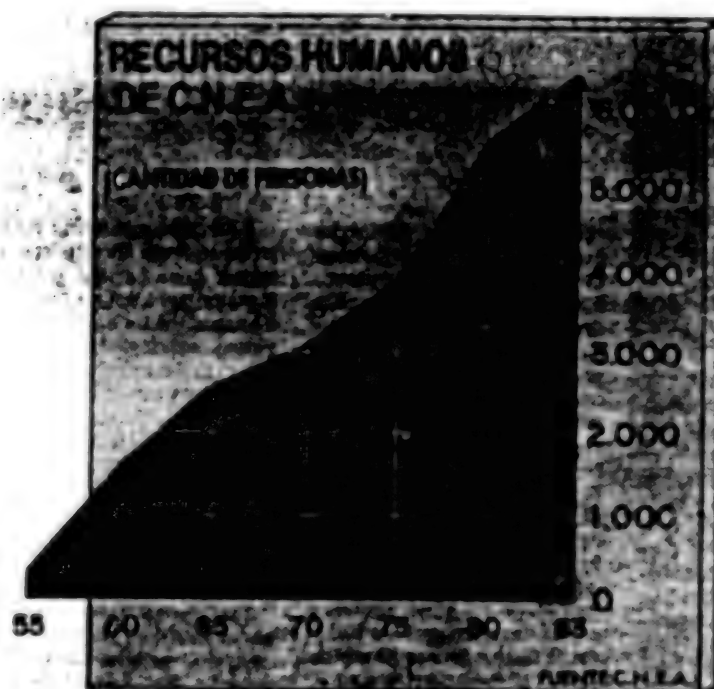
"Argentina has been making major sacrifices for 30 years through the CNEA to develop technicians and scientists in the field of nuclear power. These efforts are now being undone, and by the end of the century our country will have to purchase nuclear power plants and thus wind up technologically dependent.

"We must recognize that domestic nuclear energy companies are investing in technology for the country's development and thus have seen their ambitions completely frustrated.

"The upshot of this entire situation is that Atucha II will not be completed, work will grind to a halt on the uranium reprocessing and heavy water facilities, and we will be unable to even talk about uranium enrichment.

"Payments under the contracts for the heavy water production and uranium enrichment plants are in arrears because the flow of funds from the Treasury to the CNEA has been restrained.

Work on Atucha II and the heavy water plant is about 70 to 80 percent completed. Prefeasibility studies have not yet even begun on the fourth nuclear power plant that our country needs. The Nuclear Plan calls for six to be in operation by 1997.



Key:

1. CNEA Manpower (Number of Persons)

Funding Held Back

Buenos Aires CLARIN in Spanish 30 Sep 84 pp 11, 13

[Article on statements by Renato Teregi]

[Text] The Treasury has so far handed over only 3.5 percent of the funds appropriated for the year. But even if the budget submitted to Congress is implemented, there will, among other things, be another year delay at Atucha II and the Industrial Heavy Water Plant, while the Reprocessing Plant will fall considerably behind schedule and not start up until 1988. This is what CLARIN was told by Renato Teregi, the managing and financial director of the CNEA, in talking about the budget constraints facing the commission. His statements were as follows:

This is how the CNEA's budget was arrived at. First of all, a lower-limit budget was drafted in accordance with the administration's wishes. Then there was an upper-limit budget reflecting the CNEA's desire to continue carrying out specific items on its agenda, without taking into account the country's overall economic goals. Finally, an intermediate-level budget was drafted, falling between the commission's needs and the potential of the overall economic plan. This latter budget draft was the one that the Finance Secretariat approved.

Implications

However, even if the budget submitted to the National Congress is implemented, the implications for the Nuclear Plan this year are the following: there will be practically no progress at Atucha II towards criticality, and therefore its completion will be delayed another year (a total of 36 months) to 1990.

The Industrial Heavy Water Plant will be similarly affected; the delay here will be at least 30 months, and thus it would start up in late 1986.

The Pilot Reprocessing Plant under the Fuel Technology Project will suffer a lengthy delay, and current forecasts are that it will start up by 1988.

The purchase at a suitable price of the first load of heavy water for the Embalse Plant will also have to be put off again, and therefore we will have to continue using foreign exchange to lease under the contract.

The Uranium Enrichment Plant will also suffer delays, as the first stage is scheduled to be completed by 1986.

Mining of uranium ore at the Sierra Pintada Deposit will be cut back sharply, thus preventing us from maintaining the strategic stockpile we need to assure the continued operation of the nuclear power plants now functioning, given unforeseen developments during the various stages of the ore-element-fuel process.

The indispensable expansion of facilities at the Scientific Calculation Center has had to be postponed, with the resulting risk of greatly disrupting the center's ability to develop scientific and administrative rates based on the services that it performs.

Damages

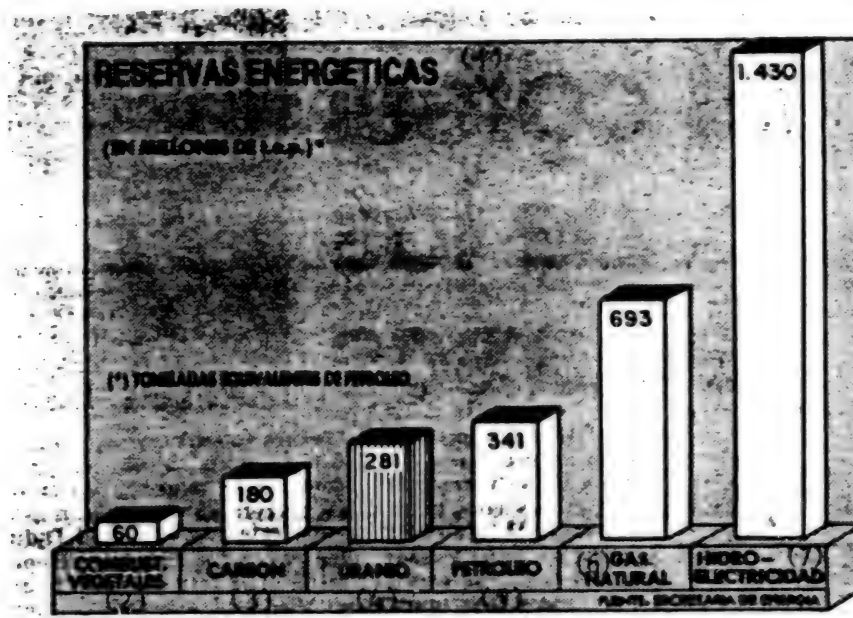
Costs at all projects will increase as a result of unproductive outlays, fixed expenditures, interest during construction and potential contract annulment costs.

Aside from all these significant points, however, we must bear in mind the impact that project delays and the CNEA's failure to pay within a reasonable period will have on the private domestic contractors and subcontractors in the field of engineering and industry. Serious social problems could arise from personnel layoffs, shifts in company field of activity and even the disappearance of some firms, with the resulting impact on the continuity of the Nuclear Plan and the sought-after reactivation of the national economy. This is because one of the most important objectives in working out the Nuclear Plan was to establish long-range planning targets not only for the CNEA but also for the private firms that pinned their expansion hopes on these targets. Their forecasts have now turned out to be detrimental to their interests, and the situation is aggravated by the difficulties in receiving payments.

Unpaid Accounts

A number of problems also stem from the implementation of the budget. It should be clarified in this regard that since the National Budget has not been passed, the available credit is from the previous year at December values. This means that we have to work with 7.374 billion pesos when in theory the amount allocated for this year is 38.19 billion. However, the government did not allow us to use the entire budgeted amounts; under a series of decrees it authorized certain percentages of the previous year's budget over given periods, permitting access to the entire amount only this month.

The percentages could have been increased to meet urgent service needs. This should not have been resorted to in the case of the CNEA, however, because the National Treasury drastically reduced the flow of funds, which greatly increased the number of unpaid accounts. This led to a sharp drop in the supply of goods and services because the work capacity of the affected companies was curtailed when they had to cut back on the personnel and equipment assigned to Nuclear Plan projects.



Key:

1. Energy Reserves (in millions of oil-equivalent tons)
2. Biomass
3. Coal
4. Uranium
5. Oil
6. Natural gas
7. Hydroelectricity

Moreover, when the National Budget is passed, the companies will not be able to regain their work capacity immediately, inasmuch as the nonpayment was primarily a cumulative process that began with the CNEA, which was unable to meet its obligations. The companies were unable to secure loans from other sources to meet their needs, and thus their working capital and, simultaneously, their work capacity shrank.

Nevertheless, the commission took the country's economic situation into account and compared the overall trend in nonpayments from the General Treasury and its own status in this regard. The CNEA discovered that its percentages had risen, from 9.1 percent in December of last year to 21.4 percent this May. These figures show that the problem has gotten worse for this sector, over and above the General Treasury's difficulties.

After lengthy efforts, the CNEA finally got the General Treasury last August to hand over as much money as the commission had received during the previous 8 months. Even so, as of now (31 August 1984) only 3.49 percent of the 38.19 billion pesos appropriated this year under the budget submitted to Congress has been turned over.

National Commission for Atomic Energy, 1984 Budget (in millions of Argentine pesos)

<u>Expenditures</u>	<u>1983 Budget</u> <u>(current</u> <u>values)</u>	<u>1983 Budget</u> <u>(December</u> <u>1983 values)</u>	<u>1984 Budget</u> <u>Requests</u> <u>(December</u> <u>1983 values)</u>	<u>1984 Budget</u> <u>Accepted</u> <u>by Finance</u> <u>(December</u> <u>1983 values)</u>	<u>1984 Budget</u> <u>Submitted</u> <u>to Congress</u> <u>(June 1984</u> <u>values)</u>
Personnel and current expenditures	1,299.6	2,832.2	5,037.9	4,631.9	10,300.5
Real investment	5,963.3	12,425.8	15,356.0	12,163.6	25,629.7
Advances to suppliers	98.8	798.5	209.8	209.8	482.8
Other outlays	13.0	28.2	52.3	50.8	131.7
Subtotal	7,374.7	16,084.7	20,656.0	17,056.1	36,544.7
Interest	4,434.4	9,622.6	3,661.6	4,890.9	11,954.1
Subtotal	11,809.1	25,707.3	24,317.6	21,947.0	48,498.8
Debt amortization	1,854.9	3,924.0	13,279.1	842.1	38,700.5
Total outlays	13,664.0	29,631.3	37,596.7	22,789.1	87,119.3
<u>Funding and Borrowing</u>					
Government funding	11,980.8	26,000.0	33,521.8	18,314.1	38,190.9
Specific funding	572.1	1,373.0	2,531.5	2,931.6	9,792.9
Credit use	959.1	2,206.0	1,333.3	1,333.3	39,029.3
Other	152.0	52.3	210.1	210.1	186.2
Total funding and borrowing	13,664.0	29,631.3	37,596.7	22,789.1	87,199.3

Debt Interest

It bears mentioning that a delay in paying contractors and suppliers gives rise to a demandable debt that accrues interest if not repaid. Therefore, the CNEA needs to have its interest allocation under the budget increased so that it can meet its commitments. So far, however, there has been no response to its request.

Our hypothesis is that these debts could accrue interest of around 8 billion pesos, whereas budget allocations to meet these obligations total 1 billion pesos.

Revenues are another serious problem, because the Energy Secretariat has not yet approved rates that will cover the costs at nuclear power plants.

Less Investment

If the budget does not allocate more money for paying off debts and interest, then the only alternative will be to use the funds earmarked for real investment. In my opinion, this is what will happen this year, inasmuch as if we compare the 25.384 billion pesos in scheduled projects with the 6.197 billion pesos worth of construction done over the first 8 months of the year, there is a 75.58 percent gap, which we cannot assume will be made up during the remainder of the year.

National Commission for Atomic Energy, 1984 Budget (Implementation as of 31 August 1984, in millions of Argentine pesos)

<u>Revenues</u>				
<u>Category</u>	<u>Budgeted</u>	<u>Disbursed</u>	<u>Difference</u>	<u>To Be Disbursed (percent)</u>
Specific revenues	9,792.853	2,472.774	7,320.079	74.74
Borrowing	39,215.513	2.865	39,212.648	99.99
Treasury contribution	38,190.948	1,331.056	36,859.892	96.51
Total	87,199.314	3,806.695	83,392.619	95.63

<u>Expenditures</u>				
<u>Category</u>	<u>Budgeted</u>	<u>Disbursed</u>	<u>Difference</u>	<u>To be Disbursed (percent)</u>
Personnel	2,343.842	877.790	1,466.052	62.54
Nonpersonnel	7,956.686	1,609.653	6,347.033	79.76
Debt				
Interest	11,954.061	2,338.549	9,615.512	80.43
Transfers	68.556	17.581	50.705	73.96
Capital goods	245.653	26.708	218.945	89.12
Construction	25,384.091	6,197.679	19,186.412	75.58
Existing goods	63.182	--	63.182	100.00
Subtotal	48,016.071	11,068.230	36,947.841	76.94

Amortization				
of debts	38,700.492	839.427	37,861.065	97.83
Suppliers				
and				
Contractors	482.751	39.934	442.817	91.72
Total	87,199,314	11,947.591	75,251.723	86.29

8743

CSO: 5100/2012

ARGENTINA

BRIEFS

INTELLIGENCE AGENTS IN CNEA--Buenos Aires, 30 Sep (DYN)--Sources of the Atomic Energy Union [Sindicato de Energia Atomica, SEA] expressed their concern today about the alleged presence of intelligence service agents within the National Atomic Energy Commission (CNEA). The sources, who asked DYN to withhold their names, revealed that an attempt to hire three agents of the Navy's Intelligence Service (SIN) was recently blocked. The source indicated that the hiring of the agents was blocked, but that "there is the veiled suspicion" that persons who belong to intelligence organizations are performing jobs within the CNEA. The source concluded by saying that "in such a sensitive area as the CNEA more caution and strictness should be employed. We are concerned that this type of infiltration is still taking place during this democratic era." [Text] [Buenos Aires DYN in Spanish 1910 GMT 30 Sep 84 PY]

CNEA-KWU AGREEMENT--Governmental sources have reported that engineer Alberto Constantini, head of the National Commission for Atomic Energy [CNEA], has signed a confidential agreement with the German company Kraft Werke Union (KWU), by which the CNEA is to act as the KWU representative for Latin America. Under this agreement, which Constantini signed during his recent trip to Austria and the FRG, the CNEA is authorized to undertake exports of nuclear reactors or parts of nuclear reactors designed with German technology. The nuclear power plants built by the KWU use natural uranium as fuel [Text] [Buenos Aires AMBITO FINANCIERO in Spanish 17 Oct 84 p 11 PY]

CSO: 5500/2018

GOMES VIEWS BUDGETARY PROBLEMS, INTERNATIONAL BIDS

Revised Budget Not Approved

Sao Paulo GAZETA MERCANTIL in Portuguese 27 Sep 84 p 13

[Text] Rio de Janeiro--Nuclebras will pay about 60 billion cruzeiros this year in penalties for not honoring commitments to suppliers and contractors. These additional costs, equivalent to one-fifth of what the state enterprise intends to invest in its projects, result from the fact that the Special Secretariat for Control of State Enterprises (SEST) has not approved an adjustment of its budget, fixed at the beginning of the year at 1.074 trillion cruzeiros.

This was the picture painted by Dario Gomes, president of Nuclebras, who has been asking SEST all year for an adjustment of its budget, without success. Recently the SEST set the new parameters for correction--average inflation of 190 percent and exchange rate of 1,974 cruzeiros [to the dollar?]-which brings the budget up to 1.471 trillion. Of this total, 325 billion cruzeiros will be invested in the nuclear program (Angra 2 and 3 plants and a uranium-enriching plant, mainly) and the rest is earmarked for payment of loans. Next week the new budget should be approved by SEST, according to Gomes.

The additional costs of the nuclear program--its direct expenditures through 1983 totaled \$2.3 billion--were not the only result of the budget not being brought up to date. Due to a shortage of working capital, the uranium-concentrate plant at Pocos de Caldas produced only 150 tons, compared with the 350 tons scheduled originally. With this, Brazil will only be able to pay a part of a debt of 260 tons of uranium contracted in the past with Argentina. The fact that the plant is operating at less than one-third of its capacity forced Nuclebras to dismiss 30 percent of its employees.

"The problem of the nuclear program today is shortage of funds, it is no longer technology. We have technology to build and operate plants, just like the Germans, who are breaking records," said Gomes. In practice, with the shortage of funds, the nuclear program was limited to two plants, the units producing concentrate and uranium hexafluoride and the enrichment plant, which will be ready next year. But, according to Gomes, the shortage of funds did not interrupt construction of Plants 2 and 3 and the enrichment unit. The first has 50 percent of its civil works completed, 80 percent of the engineering projects are ready and 85 percent of the equipment has been delivered. In Plant 3 only 5 percent of the civil works have been completed although 70 percent of its equipment is ready.

This same report, with a complete retrospect of the Brazilian nuclear program, will be submitted by Nuclebras to the next president of the republic. A study for this purpose should be concluded within 1 month. Through this study, Nuclebras intends to present to the next government its point of view about the program, what has resulted in terms of technology absorption. In the opinion of Gomes, it would be "madness" for the next government to interrupt already-completed projects, not only because it represents investment, but also because it represents technology absorption. "It is necessary to have continuity in order to maintain technological capabilities. It is not necessary, however, to build one plant after another," he said.

Current Program Not Affected

Sao Paulo FOLHA DE SAO PAULO in Portuguese 27 Sep 84 p 10

[Text] Rio de Janeiro--The delay in approval by SEPLAN [Planning Secretariat] of an increase of 195 billion cruzeiros in the Nuclebras budget resulted in an additional expenditure for the company of 60 billion cruzeiros in financial costs for not having honored commitments regarding payroll and purchase of material and equipment.

The company's president, Dario Gomes, asserted, however, that the program planned for this year was not harmed. It affected only production of uranium concentrate (yellowcake) at the Pocos de Caldas plant, which, for lack of working capital, will produce only 150 tons this year, although its capacity is 500 tons annually, which led to a 30-percent reduction in employment.

Gomes believes that the new budget of 1.431 trillion cruzeiros (compared with the initial amount of 1.074 trillion cruzeiros) should be released next week, recomputed based upon average inflation of 190 percent and an average exchange rate of 1,794 cruzeiros.

This budget corresponds to \$750 million, thus less than the \$800 million considered to be the ideal investment for the nuclear program. Of the 1984 budget, 325 billion cruzeiros correspond to investments and the rest to loan repayments.

Nuclebras is preparing a study of the whole nuclear program to submit to the next administration, Dario Gomes revealed. "The program has been readjusted in the last 2 years to the nation's economic reality and I believe it should be continued because it has already past the point of no return," he asserted.

Until the present, \$2.3 billion in direct costs have been spent on the nuclear program, which is estimated at \$18.5 billion. But Dario Gomes does not mention indirect costs, because he considers it a very complicated question, "foolishness" because one never knows the financial cost of each undertaking.

Nuclebras was the successful bidder in association with Andrade Gutierrez to execute the project for production of uranium concentrate in Somalia in the amount of \$60 million, Gomes reported. The company is also competing in bids in Turkey and Egypt for building nuclear plants, the only way to reduce the unused capacity of NUCLEP (Nuclebras Heavy Equipment, Inc.), which is now building the reactor

vessel for the third nuclear plant in the agreement with Germany, which was to have been installed in Peruibe, Sao Paulo, although not yet approved.

In regard to Angra 3, whose works should begin in April of next year, 70 percent of the equipment is already in storage at NUCLEP, where a task force is maintaining it.

8834

CSO: 5100/2007

EDITORIAL CALLS FOR FEWER PLANTS, MORE REALISTIC PROGRAM

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 28 Sep 84 p 24

[Editorial: "We hope for a Realistic Program"]

[Text] The directors of Nuclebras are concluding a document about Brazilian nuclear policy which is to be submitted to the two candidates for president of the republic, emphasizing, among other points, the advisability of continuing to build the Angra 2 and Angra 3 plants; beginning of uranium enrichment; and construction of the factory for fuel elements. One of the candidates, Tancredo Neves, has appeared inclined to go ahead with the program, after being completely overhauled and adapted to Brazilian reality.

As a matter of fact, the revision made by the government to stretch out a large part of the program and suspend plans for Plants 4 and 5, in Peruibe, is an important step. But after having made an analysis of Brazil's thermonuclear energy needs for this century, it can be said that not only the Peruibe units but also Angra 2 and Angra 3 are perfectly dispensable and could be delayed for a longer time.

To some extent, in technical circles it is not believed that the current Nuclebras timetable will be completed, calling for these plants to enter operation in 1989 and 1990. The work is going forward at a very slow rate and and it would be more fitting to imagine that at least Angra 3 will not be in operation until the first decade of the next century.

We cannot forget that each of these plants has a capacity of 1,300,000 kw, almost equal to 2 Itaipu units. All told, the thermonuclear plants of Angra 1 (already in operation, although it is not know until when...), 2 and 3 represent generating capacity of 3,200,000 kw, equal to a power plant the size of Ilha Solteira. That is a lot of power, to which must be added the 12 million kw of Itaipu...

It can be said that there is not room to absorb this nuclear power, if only because its unit cost is considerably higher and operation of any Itaipu generator should not be delayed, in order to generate energy at low cost and liquidate the foreign commitments assumed. After all, it is a matter of using a plant already finished (President Figueiredo will inaugurate the first two units on 25 October), lacking only the least expensive part of all, installation of the generating equipment.

We are stressing these figures only to bring out one fact: the Brazilian energy system will not need the nuclear plants, whose generating cost is considerably higher than that of hydroelectric plants, before the next decade at the earliest. We hope that the document that the Nuclebras directors submit to the two candidates makes this point clear, unlike what was done in the famous white paper of General Geisel, which was used as the basis to justify the whole Brazilian nuclear program.

In this document the nation's hydroelectric potential was deliberately underestimated. It spoke of usable capacity of 100 million kilowatts, when ELETROBRAS [Brazilian Electric Power Companies, Inc.] itself had already made surveys that suggested economically exploitable potential of over 200 million kilowatts. Other false arguments were used solely to provide a basis for an unrealistic program that provided for installation of 10 million kilowatts of nuclear power.

It is important that the current document be prepared not only by Nuclebras but in conjunction with ELETROBRAS, and that the data correspond to reality. We must, of course, continue the work that is aimed at absorbing the technology of the uranium cycle, but this does not imply reactivating works that now, fortunately, are delayed or initiating construction of the Sao Paulo nuclear plants.

We believe that the current administration of Nuclebras is in the hands of more responsible persons and that we shall have a balanced document, consistent with the Brazilian reality, and not an agglomeration of data seeking to justify the unjustifiable.

8834

CSO: 5100/2007

NUCLEBRAS TO BUILD URANIUM CONCENTRATE PLANT IN SOMALIA

Sao Paulo GAZETA MERCANTIL in Portuguese 27 Sep 84 p 13

[Text] Rio de Janeiro--Construtora Andrade Gutierrez and Nuclebras have won an international bid in the amount of \$60 million to execute the project and civil works of a uranium concentrate plant in Somalia, it was revealed yesterday by Dario Gomes, president of Nuclebras. To install the unit Somalia, an African country that is taking its first steps in the field nuclear energy, will receive funds from Arab countries, including Saudi Arabia and Iraq, according to Paulo Lima, director of mineral research and development for Nuclebras.

(According to informed sources consulted by this newspaper yesterday evening, this transaction is part of a much larger package, valued at \$600 million, whose signing depends only upon some final contractual details. This package includes sale of technology, marketing of equipment made in Brazil and civil works. The civil works, awarded to Andrade Gutierrez, is alone budgeted at about \$300 million.)

Nuclebras will participate in the undertaking with the technology of extracting the mineral and production of the concentrate, the first step in the process of making nuclear fuel.

The Andrade Gutierrez firm, responsible for the proposal submitted to Somalia, will extract the ore, a service it now renders to Nuclebras in Pocos de Caldas, Minas Gerais, and will construct the mill, experience in which it also acquired in Pocos de Caldas.

"Brazil has mastered this technology perfectly and is capable of producing the concentrate from various uranium ores," commented Lima. This process was developed by Nuclebras in its laboratories in Belo Horizonte and in Pocos de Caldas, where it will produce 150 tons of concentrate this year.

Nuclebras is also bidding on furnishing equipment and construction of nuclear plants in Egypt and Turkey. If it is successful, it will have something to occupy its heavy-equipment plant, whose activities were substantially reduced with the slowdown of the nuclear program.

8834

CSO: 5100/2007

BERYLLIUM PRODUCTION DROPS 18.2 PERCENT IN 1983

Sao Paulo GAZETA MERCANTIL in Portuguese 26 Sep 84 p 10

[Text] Rio de Janeiro--Brazil is the world's largest producer and exporter of beryllium, a strategic mineral for the military and space industry, and its reserves have the highest content required in international transactions, this newspaper has been informed by geologist Lourival Cruz Diniz Filho, of the Department of Mineral Economics of the National Department of Mineral Production (DNPM). Brazil's production of beryllium went from 811 tons in 1981 to 1,135 tons in 1982, falling to 928 tons in 1983. This 18.24-percent drop from 1982 output is explained by the geologist as reflecting the "strong competition of producers from China, South Africa and Rwanda."

Considered "an element of interest for nuclear energy" by Decree-Law No. 1310 of 15 January 1981, exports as well as imports of beryllium require the previous consent of the federal government. The National Commission for Nuclear Energy [CNEN], according to the source, has set the export quotas through the end of September: 250 tons of beryllium, 1,000 tons of lithium, 1,000 tons of niobium and 100 tons of zirconium. Brazilian export of amblygonite, a source of lithium (an energy-related mineral), was prohibited.

Domestic Production

Brazilian production of beryllium, being related to gold mining, cannot be quantified precisely, the geologist asserts. The companies authorized to operate the mines submit data about their legal areas and purchases from corporations legally qualified by the Finance Ministry to market the output derived from gold mining. Brazilian production, the specialist said, is earmarked to fill orders from abroad --the importing market is the United States--inasmuch as Brazil does not consume the concentrate. Diniz Filho believes that, with entrance into operation of the purchasing center for minerals stockpiling being built by Metais de Minas Gerais S.A. (METAMIG), excess production could occur and stocks could be formed.

The geologist reports that, despite unfavorable marketing conditions domestically, the "Peixes" gold field in Goias increased production 200 percent during the first half of this year, compared with the same period of 1983. In the municipalities of Itabapoana and Valença, in the state of Rio de Janeiro, beryllium mining is increasing, the specialist reports.

Reserves

Brazil's reserves of beryllium are estimated at 386,000 tons. Although little known, they have the highest content (over 10 percent of beryllium, the average floor used in transactions of the mineral). Brazil controls 36 percent of the world's beryllium reserves, estimated at 1,102,000 tons. Despite the world economic crisis, copper-beryllium alloys represented 75 percent of the market, while the primary metal corresponded to 20 percent of the world market.

The remaining 5 percent was marketed in the form of beryllium oxide.

8834

CS0: 5100/2007

BRIEFS

RIO LIMITS PLANT CONSTRUCTION--Rio de Janeiro--The Legislative Assembly of the State of Rio de Janeiro approved a bill that makes construction of nuclear power plants and facilities for processing radioactive material for industrial purposes subject to authorization by the legislature, followed by extensive popular consultation. The bill, introduced by Deputy Listz Vieira (PT [Workers Party]), establishes criteria for construction of atomic plants in the state of Rio, with the objective of preserving the environment and safeguarding the health, safety and welfare of the population. Listz Vieira believes that Governor Leonel Brizola will ratify the bill, which received a favorable opinion from the assembly's Commission on Constitution and Justice in contending that it does not conflict with any federal legislation. "With approval of the bill, construction of Angra 2 and Angra 3 may meet interference in their installation if they are in conflict with the new legislation," the PT deputy emphasized. In his supporting statement Liszt Vieira maintains that "few things in this country have been defined in so authoritarian a form as was nuclear policy." The deputy maintains that there is no federal law that determines the location of atomic power plants, adding that the National Commission for Nuclear Energy (CNEN) is the agency responsible for issuing licenses and authorizations for construction of nuclear facilities. The deputy's bill provides that the final decision be made by the state legislative assembly, which would have full jurisdiction to decide about the appropriateness or not of installing these power complexes in state territory. The assembly's decision would then be submitted to a popular referendum, the outcome of which would depend upon a simple majority of all the voters participating in the plebiscite. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 7 Sep 84 p 24] 8834

CSO: 5100/2007

BRIEFS

NUCLEAR INSTITUTE EMPLOYEES COMPLAIN--The research and technological development being carried out by Peruvian scientists at IPEN [Peruvian Nuclear Energy Institute] is in serious danger owing to poor administration by the president of that institute, Brig (EP) Juan Barrera Delgado, according to an accusation by employees of the institute. In an open letter addressed to the minister of energy and mines, 216 employees warned that there is also a danger of wasting the millions invested in this sector, thanks to numerous foreign loans, especially for the Huarangal project, which is virtually paralyzed. They accuse the current president of IPEN of not taking action to control the high number of resignations and departures of Peruvian and foreign specialists, which were due in part to the humiliating and rigid treatment to which they were subjected by the authorities, who seem not to be aware of the important mission entrusted to this institute. The employees also denounced the fact that numerous members of the armed forces were assigned to technical positions for which they were insufficiently qualified and that they have been favored over civilian employees in the allocation of grants for study. A paragraph of the letter notes: "There have been cases in which military personnel trained in the nuclear field at high cost have returned to the armed forces to perform in different positions without transferring the experience acquired." [Text] [Lima EL DIARIO DE MARKA in Spanish 30 Sep 84 p 8] 12336

CSO: 5100/2009

BRIEFS

NUCLEAR INSTALLATIONS SAID SECURE--Lahore, 18 Oct--Lieutenant General (Ret) Faiz Ali Chishti has said that Indian planes cannot reach the Kahuta nuclear installation and that it is impossible for the Israeli Air Force to destroy them. He told an interviewer that his claim is based on classified information that he has seen. He said that all possible security measures have been taken for the safety of the Kahuta installation and it is now impossible to attack them by air. General Chishti said: It is not possible for Pakistan to make a bomb now but we must obtain the knowhow for the use of nuclear arms. [Text] [Rawalpindi HAIDAR in Urdu 19 Oct 84 p 1 GF]

CSO: 5100/4709

INEFFECTIVENESS OF IAEA VOTE NOTED

Johannesburg RAND DAILY MAIL in English 3 Oct 84 p 3

[Article by David Furlonger: "IAEA Vote To End Aid to SA Could Prove Toothless Weapon"]

[Text]

THE International Atomic Energy Agency (IAEA) has voted to end assistance to SA.

At its general conference in Vienna last week the IAEA voted overwhelmingly in favour of a proposal calling for an end to all nuclear co-operation with SA.

The proposal by Morocco, on behalf of the African group, said there should be no more transfer to SA of fissionable materials and techniques that could help "the capability of developing nuclear arms".

It also urged IAEA members to stop buying uranium from SA and SWA and demanded that SA should immediately open its nuclear facilities to IAEA inspectors.

A spokesman for the UN agency said in Vienna yesterday that the resolution was a follow-up to a UN report saying SA was trying to de-

velop a nuclear weapon capability.

He added: "Although we are a technical agency and try to avoid politics, there is a growing revolution against SA here to stop giving research contracts and letting SA participate in our activities."

"This latest resolution is a follow-up to resolutions of the UN General Assembly."

The resolution, approved by 57 votes to 10, is binding on the IAEA but not on member countries.

It is the latest of a string of anti-SA resolutions since the IAEA refused to accept the SA delegation's credentials at the 1979 New Delhi general conference. SA is still an IAEA member.

The latest action is something of a toothless weapon, however, and is unlikely to have any effect on developments at the Koeberg nuclear reactor near Cape Town.

Britain, the US and other Western nations were among 23 countries

that abstained from last week's vote, while France is still heavily involved in establishing the Koeberg reactor.

The only part of the resolution to be immediately relevant relates to the inspection of SA's nuclear facilities.

According to the IAEA spokesman, inspectors have been trying "for some considerable time" to gain access to Koeberg.

Sources say negotiations between SA and the IAEA to arrange such an inspection are now at an advanced stage.

The chairman of the Atomic Energy Board, Dr Wynand de Villiers, admitted yesterday that South Africa's relations with the IAEA were "rather strained".

But he said he would not comment on the latest move until he had seen a full copy of last week's resolution and a report of the meeting.

SOUTH AFRICA

BRIEFS

NUCLEAR STANCE--South Africa could find itself in a nuclear "wasteland" if it does not comply with demands by the International Atomic Energy Agency to open its nuclear plants to inspection. Last week the IAEA general conference in Vienna threatened to impose sanctions on South Africa unless it complied within a year. The chairman of the SA Atomic Energy Board, Dr JWL de Villers, has not yet received official notification and has declined to comment. The IAEA, of which South Africa is a founder, adopted a resolution which expressed alarm at South Africa's nuclear abilities. The resolution said that unsafeguarded SA nuclear facilities enabled Pretoria to make nuclear weapons, thereby posing a security threat to the continent. The IAEA safeguards some nuclear facilities in SA but not a pilot nuclear enrichment plant. Experts this week said that sanctions could cut off South Africa from research and development. [Text] [Johannesburg THE STAR in English 10 Oct 84 p 12]

CSO: 5100/4

SPENT FUEL ISSUE FRUSTRATES NUCLEAR LAW PANEL

Helsinki HELSINGIN SANOMAT in Finnish 29 Sep 84 pp 3, 35, 40

[Articles by Renny Jokelin and Juhani Pekkala: "Ministerial Group Quits, No Unanimous Proposal on Nuclear Energy Law"]

[Text] The new nuclear energy law, which has been under preparation for many years, is once again faltering. The work group comprised of five ministers has decided to halt its work without accomplishing a unanimous proposal on the new law.

A unanimous outcome faltered on the question of where the funds to be collected from the nuclear power companies for nuclear waste management will be deposited. Four ministers or Seppo Lindblom, Matti Ahde, Toivo Ylajarvi, and Pekka Vennamo supported the solution in which a separate fund controlled by the Trade and Industry Ministry would be established.

Justice Minister Christoffer Taxell, however, promoted until the very end an arrangement by which waste funds should be deposited in the internal accounts of Teollisuuden Voima [Industrial Power] and Imatra Power, which are the producers of nuclear power. In this way the power companies could use the money for their own purposes until the time comes to deal with the waste and dismantle the used power plant structures.

As far as an outside fund is concerned, the power companies would, on the other hand, be able to borrow from it for temporary use only a portion of the funds they have paid into it.

To date 700 million markkaa have been set aside in the companies for nuclear waste treatment. More than 3 billion markkaa have been calculated as the total reserve amount over a period of 25 years. The procurement of a fifth nuclear power plant would increase the amount even more.

The faltering progress of the law in the ministerial group will postpone its submission to parliament until next year.

The banks and insurance companies, which want the waste funds under their control, have come up with a new proposal for the fund. A proposal signed by the

leaders of Finland's financial world was submitted to the registrar's office of the Trade and Industry Ministry.

Taxell Will Not Consent to Nuclear Waste Fund

The work group comprised of five ministers, which has been working on a new nuclear energy law, ceased its work in disagreement. A unanimous decision was overturned by Justice Minister Christoffer Taxell, who does not approve of depositing so-called nuclear waste money in a fund outside of the power companies.

The other four ministers would like to see a separate waste fund, which would be administered by the Trade and Industry Ministry. It has been calculated that more than 3 billion markkaa will have to be held in reserve for the waste fund.

This disagreement will probably result in the fact that the bill will not make it to parliament this year.

Justice Minister Taxell considers that the money to be collected for nuclear waste treatment and the dismantling of power plants should be kept in the accounts of the companies which own the nuclear power plants or Teollisuus Power and Imatra Power.

In addition to Taxell of the Swedish People's Party, the group includes Trade and Industry Minister Seppo Lindblom (Social Democrat), Environmental Minister Matti Ahde (Social Democrat), Agriculture and Forestry Minister Toivo Yläjärvi (Center Party member), and Tax Minister Pekka Vennamo (Finnish Rural Party member).

The ministers have reached agreement on the other points of the law. On Thursday the ministerial group was supposed to have convened in a decisive session in which the bill would have been approved and sent on for final writing.

Taxell, however, announced that he is still of a different opinion on the point concerning the waste fund. According to Taxell, "the money should be collected by and kept at the disposal of those who produce the waste and have the responsibility for taking care of it".

In practice this means that present practice would be continued. Now the nuclear power companies or IVO [Imatra Power] and TVO [Teollisuus Power] must each year reserve a certain sum, by which the cost of storing and treating hazardous wastes will be defrayed.

More Than 3 Billion in Waste Funds

Already more than 700 million markkaa, of which 100 million has been contributed by Imatra Power, have been accumulated for the nuclear waste reserve fund. This is a result of the fact that Imatra Power can transport its wastes to the Soviet Union. TVO's waste management problem, on the other hand, has not been completely resolved since its two power plants are from Sweden.

All in all, the amount of the funds to be collected for the treatment of waste from the present four nuclear power plants will be more than 3 billion markkaa. At least four-fifths of this amount will fall to the share of Teollisuus Power, which is primarily under private ownership.

The amount of the waste treatment fund will increase inasmuch as a fifth 1000-megawatt nuclear power plant is ordered for Finland. The additional amount would be considerable inasmuch as the power plant would be ordered from a country which will not accept waste for subsequent treatment.

According to the present law, the power companies themselves will ensure that funds will be available for waste treatment when that becomes timely. However, the compilers of the new law have wanted a stronger guarantee that waste funds will, indeed, be accumulated.

Thus except for the power companies, nearly all the parties have talked for a long time about the kind of outside fund in which waste treatment reserve money will be accumulated.

It appears that Justice Minister Taxell is now the only supporter of the state-owned Imatra Power and the privately owned Teollisuus Power.

Ministerial Group Quits

The banks and insurance companies have just come up with a new proposal, according to which waste treatment money would be placed in a fund outside of the power companies, but the companies would be able to receive 90 percent of the money for their own use. The funds would be administered by a council under the jurisdiction of the Trade and Industry Ministry according to the proposal of the financial institutions.

The lack of progress on the bill in the ministerial group will postpone its completion until next year. Minister Lindblom, who headed the work group, stated to HELSINGIN SANOMAT on Friday that the chances of the bill being submitted to parliament in December are rather slight.

"The bill will in any event be submitted in the dead of winter whatever the ministerial group decides. There is reason, however, to halt the work of this group at this point," stated Lindblom.

Taxell and the Swedish People's Party may hold to a strict line in the government's night school as well as when the proposal comes up before parliament. According to Lindblom, parliament "will, however, be given only one unanimous proposal for a nuclear energy law".

The enactment of a nuclear energy law has generally been considered to be a preliminary condition for a decision on a fifth nuclear power plant. Taxell as well as Lindblom emphasized on Friday that the power plant question can, on the other hand, be presented "just as easily" in many other ways without a new nuclear energy law.

Finance Leaders' Funding Proposal

The directors of banks and insurance companies have sent their own proposal on the nuclear energy bill's waste treatment fund to Trade and Industry Minister Seppo Lindblom (Social Democrat).

The memorandum was signed by, among others, Chairman Fredrik Castren of the Industrial Association, General Manager Jaakko Lassila of Kansallispankki [National Bank], General Manager Mika Tiivola of Suomen Yhdyspankki [United Finnish Bank], Bank Director Reijo Pukonen of Postipankki [Postal Bank], and the managing directors of the largest insurance companies including Erkki Pesonen of Kansayhtiot.

Teollisuus Power is also behind the proposal. It is especially interested in this type of a nuclear waste treatment fund since it will have to contribute the largest share of money to the fund. Imatra Power, which will be able to dispose of its waste in the USSR, has not signed the proposal.

The leaders of the financial world, however, placed such little value on their own proposal or on the trade and industry minister that the proposal was only submitted to the registrar's office of the Trade and Industry Ministry. No one submitted it personally to the minister.

"New Proposal of Mediation"

The manner in which the nuclear waste fund will be handled in practice has been the most difficult point of the nuclear energy law. A dispute has risen over who will control and supervise the funds.

The Trade and Industry Ministry, the Finance Ministry, the Bank of Finland, or insurance companies have been proposed as an administrator. The funds would be deposited in the Bank of Finland, an outside fund, or in the insurance companies.

The financial institutions of industry and the insurance companies have now presented their own compromise proposal.

The proposal proceeds from the fact that the funds needed for nuclear waste treatment would be available under all conditions without impediment and in a purposeful manner. The government could be given a guarantee of the funding for nuclear waste treatment. The value of the accumulated funds would be maintained at the full denomination value.

The compilers of the proposal proceed from the fact that the funds would be deposited in energy management and industrial circles. They are proposing that a nuclear waste treatment council operating under the jurisdiction of the Council of State would supervise the nuclear reserve system. The council should ensure that the reserve system will protect the interests of society.

Council's Tasks

The council's tasks would be to approve the security arrangements including the conditions pertaining to deposits, insurance, and money to be loaned back. It would give instructions for maintaining the value of the funds until the waste treatment obligation has been met and would follow the course of developments in nuclear waste treatment.

The minister of trade and industry is being proposed as chairman, a minister to be appointed by the Council of State as vice-chairman, and representatives of the Bank of Finland, the financial and insurance institutions, and the companies producing nuclear energy as members.

Money in Finance Institutions

Industry and the finance institutions are proposing that the nuclear power companies make a proposal to the council after negotiating with the banks and the insurance companies as to how the risks approved by the Trade and Industry Ministry for the companies would be covered.

The accumulated funds would be deposited in the finance institutions or would be paid as insurance payments to the insurance companies or to both. The finance and insurance institutions would give the state guarantees on the deposits.

According to the proposal, the reserve funds could be used in such a way that 90 percent of them would be loaned back to the nuclear power company or its shareholders.

"One Can Always Lobby"

Minister Seppo Lindblom does not want to comment yet on the proposal of the financial leaders even though its content is relatively close to his own outlines.

Lindblom is clearly offended by the manner in which the proposal was submitted. The minister points out that in Finland there is in effect a parliamentary system, in which the government handles affairs and in which "others must be satisfied with this".

"Indeed, one can always lobby," states Lindblom in jest.

Minister's Irritation Surprising

Commerce and Industry's proposal on nuclear waste funding has caused friction between the compilers of the proposal and Trade and Industry Minister Seppo Lindblom (Social Democrat).

The minister took offence at the fact that commerce and industry's proposal was submitted to the ministry's registrar's office and not directly to the minister responsible for energy matters. Krister Ahlstrom, chairman of the

industry's primary power project, for his part, states that industry gave a detailed report of the proposal to the members of the ministerial group working on the nuclear energy law, of which Lindblom is also a member.

In addition to the observance or failure to observe official protocol, the industry and the minister are also of different opinions on the issue itself. Ahlstrom considers state-administered nuclear waste fund supported by Lindblom to be so risky that its implementation would place the whole nuclear power plant question in a new light.

The dispute over a nuclear waste fund administered by the Ministry of Trade and Industry brought an end to the work on a nuclear energy law in the ministerial group. In addition to Lindblom, ministers Matti Ahde (Social Democrat), Toivo Ylajarvi (Center Party member), and Pekka Vennamo (Finnish Rural Party member) support the government's funding model, but Minister Christoffer Taxell (Swedish People's Party member) wants the waste funds to remain at the disposal of the nuclear power companies.

10576

CSO: 5100/2503

FIRST RESULTS FROM JET FUSION EXPERIMENTS REPORTED

Paris NUCLELEC in French 19 Sep 84 p 11,178

/Text/ Encouraging results of the first JET experiments were given in a communication presented by the assistant director of the project, Dr Paul Henry Rebut, at the 10th International Conference on Plasma Physics and Controlled Nuclear Fusion Research in London, Wednesday, 12 September.

The "Joint European Torus"—JET—which is the largest experimental device of this type of fusion, is the main project of the European Community's program. The communication points out the success of the experimental program since the machine was put into operation within the time limits, in June 1983 and summarizes the forecasts for the proposed program.

In the JET, currents of 3.7 million amps were injected into the hydrogen and deuterium, producing plasmas at temperatures of 40 million degrees C.

The maximum value of plasma containment time was 0.6 second (this gives a measure of efficiency of the magnetic field of containment). This is a record and one of the three parameters which must be mastered in a fusion reactor, the two others being density of the plasma and temperature, which must both be increased in a comparable manner.

These promising results were obtained with an injected power of about 3 MW. During the years to come, a power of 25 MW for additional heating will be progressively reached until a plasma temperature sufficient to produce abundant fusion reactions is obtained (about 100 million degrees C).

The director of the project, Dr H. O. Wuester, commenting on these preliminary experiments indicated: "The JET has already surpassed the expected performances of this project for the first phase of the experiment and has certainly placed Europe at the head of fusion research. These results augur well for the future."

It is forecasted that full power will be achieved in 1989-1990 and to introduce at that time a mixture of deuterium and tritium, in order to obtain abundant energy producing fusion reactions. This will constitute a huge step in European plans for the development of a controlled fusion reactor capable of producing electricity in the next century.

12687

CSO: 5100/2502

UNDERGROUND RESEARCH LAB, NEW WASTE STORAGE SITES EXPECTED

Paris NUCLELEC in French 19 Sep 84 pp 1,176-11,177

/Text/ Nuclear waste. Towards preliminary discussions on new storage sites.

Preliminary discussions on the choice of sites for the establishment of two surface storage centers should be held before the end of the month between ANDRA, National Agency for the Management of Radioactive Waste, and the regional authorities concerned, that is prefects, members of regional councils, etc....

Half a dozen areas in three different regions of France have just been pre-selected by ANDRA as possible sites.

In fact, according to essentially documentary information, based on work carried out by the BRGM /Geological and Mining Research Bureau/ there are about 20 different locations which can be considered as candidates for further study.

One of these sites, it is believed, is located in Lorraine, another in the South. It will be remembered that last 19 June, Jean Auroux, at that time Energy Secretary, had announced the government's decision to proceed with having studies made and with the establishment of new storage sites for radioactive waste.

The decision followed up on the recommendations made by the High Council for Nuclear Safety which called for the creation of two new surface storage centers for short-life waste and an underground laboratory for the study of permanent, deep storage conditions for long-life waste.

The cost of a surface site, which would cover about 50 hectares, is estimated at about 200 million francs by ANDRA specialists.

According to the schedule: first the various exploratory work projects (known as confirmation), followed by numerous administrative tasks, including 18 months of study; then the 2 to 3 years necessary for construction. Opening of the first storage site could be expected by the middle of year 1990, provided that the green light to go ahead be given by the middle of next year.

As for the underground lab which in its first phase would only be used for research--without using waste--at best, it could not become operational for storage before 1992/1993.

BRIEFS

PALUEL 2 LINKED TO NETWORK--The second unit of the nuclear reactor at Paluel, between Dieppe and Fecamp, on the Channel, was linked to the network on 14 September. The reactor's divergence occurred on 11 August. This is the second unit of the 1,300 Mw level to start operation in France. The first, also at Paluel, was linked to the network on 22 June and it should reach its nominal power at the end of September. /Text/ /Paris NUCLELEC in French 19 Sep 84 p 11,177/ 12687

CHINON B1 RESUMES OPERATION--The first PWR /Pressurized Water Reactor/ unit of the Chinon power plant in Indre et Loire, at the confluence of the Vienne and Loire rivers, which was put into industrial operation in February 1984, was restarted on 14 September after 16 weeks of shutdown since 21 July for full inspection and refuelling. Chinon B1 has a capacity of 870 Mw. It is the first plant whose reactor's fine control has been changed following refuelling, which gives it great operational flexibility. /Text/ /Paris NUCLELEC in French 19 Sep 84 pp 11,177-11,179/ 12687

SAINT PIERRE URANIUM PROCESSING HALTS--The uranium processing plant located at Saint Pierre in the Department of Cental, belonging to SCUMURA (Central Company for Radioactive Uranium, materials and metals) of the TOTAL group, will be shut down next June for an unlimited time, the management announced. This decision was made, according to the directors, because of low uranium prices. The plant employs 70 people. /Text/ /Paris NUCLELEC in French 19 Sep 84 p 11,178/ 12687

CSO: 5100/2502

END

END OF

FICHE

DATE FILMED

28 Nov 1984